

## STORMS AND WEATHER WARNINGS

## WASHINGTON FORECAST DISTRICT

There were three storms of considerable intensity during the month. The first developed suddenly over Virginia and the Carolinas during the night of the 2d-3d, and by 8 a. m. of the 3d the barometer had fallen to 29.58 inches at Cape Hatteras. Southeast storm warnings were ordered displayed at 10 a. m. from New York City to Eastport, Me., and northwest storm warnings at 9 p. m. south of New York to Hatteras. By 8 a. m. of the 4th the pressure near the center of the storm had fallen to 29.08 inches at New Haven, Conn. Gales were experienced at all points from Hatteras northward, New York City reporting a maximum of 56 miles per hour from the northwest and Portland, Me., 52 miles per hour from the southeast.

Just two weeks after the first storm another was central near Wytheville, Va., moving northeastward with increasing intensity. At 9:30 a. m. southwest storm warnings were displayed from Cape Hatteras to Eastport, Me. This storm was also attended by shifting gales along the entire Atlantic seaboard north of Hatteras and by a small tornado in the vicinity of Washington, D. C. (See p. 499 of this REVIEW.) At New York City and Sandy Hook, N. J., the wind attained a velocity of 60 miles per hour from the south.

The only other storm of importance was that of November 30-December 1. A secondary disturbance of moderate intensity, that was central over southeastern Missouri the morning of the 30th, moved northeastward with great rapidity as well as with rapidly increasing intensity. By 8 p. m. the center was over northeastern New York, Northfield, Vt., reporting a barometer reading of 29.42 inches. New York City reported the highest wind velocity, 64 miles per hour from the northwest, but velocities in excess of 50 miles per hour occurred at Cape Henry, Atlantic City, Sandy Hook, Block Island, and Nantucket.

Because of the unusually mild weather during October, frost warnings were still required at the beginning of November throughout the district. Warnings for limited areas were issued on the 2d, 3d, 4th, and 5th, and general warnings for all sections, except the Florida Peninsula, on the 6th. By the 7th killing frost or freezing temperature had occurred quite generally as far south as Tennessee and the interior of North Carolina. On the 12th, 16th, 17th, 18th, 19th, and 20th warnings were issued for portions of the South Atlantic and east Gulf States, the heaviest frosts over a considerable area occurring on the 19th and 20th. No cold-wave warnings were issued during November, except for the extreme western portions of Kentucky and Tennessee and northwestern Ohio on the 30th.—*C. L. Mitchell.*

## CHICAGO FORECAST DISTRICT

The storms moved across the forecast district with more than the usual frequency, and in consequence a larger number of storm and small-craft warnings than usual were ordered for the Great Lakes.

Small-craft warnings took care of the vessel interests until the close of the first decade, as up to that time winds on the lakes were not dangerous for large vessels. However, a storm which developed in the Far West had by the 11th reached the upper Mississippi Valley and passed across the Great Lakes on the 11th and 12th with steadily increasing energy and was followed by a cold wave of

moderate proportions. Storm warnings were displayed at all stations on the Great Lakes for this storm, and cold-wave warnings were ordered on the morning of the 11th for the entire forecast district, the falls in temperature being from exceptionally high maxima for the season to something close to or below the seasonal normal.

Another storm immediately followed in the West, and on the 15th it passed over the Great Lakes. In this storm the strong winds were mainly confined to the upper Lakes region, where storm warnings were displayed, and small-craft warnings appeared to be sufficient for the lower Lakes as the storm in its movement eastward lost energy. However, by the 17th there was a redevelopment of a secondary disturbance in the South, and as it passed northeastward across the Appalachians with constantly increasing barometric gradient to the north over the lower Lakes, storm warnings in that area appeared to be justified, and these were ordered on the morning of the 17th from Cleveland eastward.

Following this storm small-craft warnings served all purposes on the Great Lakes until the closing days of month, when warnings were ordered on all lakes as a storm of considerable energy passed eastward from the Northwest accompanied by high winds and squalls and followed by another sharp fall in temperature.

Because of the unusual warmth in the Middle States during the month, thundersqualls appeared to be much more frequent than usual, and in Chicago a record of seven thunderstorms for the month of November was established.

Advices during the month were issued to various interests which call for special service. Forecasts for considerable periods in advance, for a week or more, are being made upon request, and these appear to be quite satisfactory on the whole.—*H. J. Cox.*

## NEW ORLEANS FORECAST DISTRICT

Moderate cold waves, for which ample and timely warnings were issued, overspread most northern and central sections on the 11th-12th, 14th-15th, and on November 30-December 1. These cold waves lost strength as they moved southeastward and the cold wave warnings issued on the 11th, 29th, and 30th were not fully verified in some northeastern and central localities, but pronounced temperature changes occurred, with minimum temperatures near the verifying limits.

Frost or freezing warnings were issued for northern or central areas on the 2d, 3d, 5th, 12th, 14th, and 15th, and for southern or southeastern areas on the 16th, 17th, 18th, and 30th. Conditions occurred as forecast, except where cloudy weather prevailed in a few instances.

No storm warnings were issued or required, but small-craft warnings displayed on the Texas coast on the 16th and 30th and on the Louisiana coast on the 16th for fresh to strong northerly winds were justified.

A "norther" warning for shipping interests at Tampico, Mexico, was issued on the 16th and winds occurred as forecast.

A "fire-weather" warning for forested areas in Oklahoma was issued on the morning of the 25th, giving advance notice of strong winds, with fair weather, that occurred in the ensuing 24 to 36 hours.—*R. A. Dyke.*

## DENVER FORECAST DISTRICT

A rapid succession of LOWS moved from the north Pacific coast southeastward across the Rocky Mountain region during practically the entire month, while high